

(19) World Intellectual Property  
Organization  
International Bureau



04 FEB 2005

(43) International Publication Date  
19 February 2004 (19.02.2004)

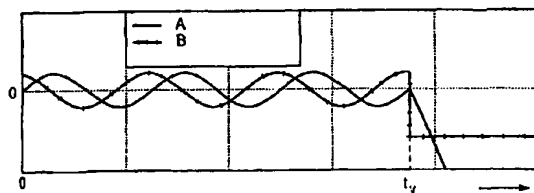
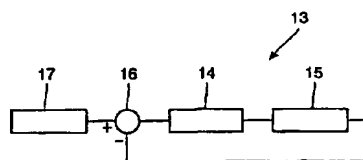
PCT

(10) International Publication Number  
WO 2004/014767 A2

- (51) International Patent Classification<sup>7</sup>: **B65H** (74) Agent: BOS, Kornells, S.; Philips Intellectual Property & Standards, Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).
- (21) International Application Number: PCT/IB2003/003143
- (22) International Filing Date: 7 July 2003 (07.07.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 02078242.1 6 August 2002 (06.08.2002) HP
- (71) Applicant (for all designated States except US): ASSEMBLEON N.V. [NL/NL]; Building HVS, De Run 1110, 5503 LA Veldhoven (NL).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): DE GRAAFF, Koen, A., J. [NL/NL]; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GI, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SI, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GI, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NI, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published: — without international search report and to be republished upon receipt of that report

[Continued on next page]

(54) Title: METHOD OF DETECTING A MALFUNCTION DURING A DISPLACEMENT OF AN ELEMENT BY MEANS OF A DRIVE SYSTEM, AND DEVICE SUITABLE FOR CARRYING OUT SUCH A METHOD



(57) Abstract: Method and device for detecting the occurrence of a malfunction upon movement of an element (7) by means of a driving system. While the element is being moved, a difference (curve A) between a predetermined, desired value and an actual value is determined at regular intervals by means of a processor (14,15,16,17). Furthermore, a derivative (curve B) of said difference is determined by means of the processor at regular intervals, wherein said difference and said derivative both fluctuate round an equilibrium value. Following this, only the values on one side of the equilibrium value of both the difference and the derivative are taken. The values of the difference are multiplied by the values of the derivative, and the result of the multiplication is compared with a reference value by means of the processor. The occurrence of a malfunction is established if the result of the multiplication is higher than the reference value.